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AUTHOR Schauerman, Sam; Peachy, Burt
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ABSTRACT

In spring 1989, a group of 33 administrators, supervisors, faculty, and staff from El Camino College (ECC) in Torrance, California, attended 10 days of training in Total Quality Management (TQM) tools and techniques. The subsequent implementation of TQM at ECC included the following six phases: (1) establishing a Campus Commitment to Excellence (CCE) coordinating committee to undertake pilot projects and introduce the campus community to TQM; (2) training process improvement teams and forming area steering committees; (3) establishing extension teams, forming new process improvement teams, and developing CCE goals and task teams; (4) applying TQM in shared governance efforts and instructional program review; (5) training self-directed TQM employees; and (6) maintaining ongoing efforts at strategic reorganization for quality transformation at ECC. By January 1993, 73% of ECC's support staff, 98% of management, and 23% of full-time faculty had been trained in TQM basics, and 31 process improvement teams were active, working on support services, curriculum development, employee collective bargaining, and governance. In addition, 50 faculty have completed training in Classroom Assessment Techniques, an alternative to TQM. ECC's Quality Institute, established in 1992, provides outside consulting and training in TQM. A review of the five TQM strategy approaches (i.e., the Element, Guru, Company Model, Japanese, and Prize Criteria approaches); an examination of obstacles to greater faculty involvement; a discussion of mid-management issues and additional TQM implementation problems. (Contains 33 references.) (PAA)

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Strategies For Implementation- The El Camino College TQM Story

by
Sam Schauerman
Superintendent/President
and
Burt Peachy,
Associate Dean
Organizational Planning

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This article traces the development of the principles and practices of Total Quality Management at El Camino College and the various stages of implementation. In addition, the article address several "issues" that arose during implementation that result for resistance to change within the institution and describes several pitfalls and traps that can occur without careful implementation analysis and involvement of all constituent groups.

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General Overview

El Camino Community College is a single-college district in the South Bay area of Los Angeles County. We are located in the city of Torrance and serve the communities of Inglewood, Hawthorne, El Segundo, Redondo Beach, Hermosa Beach, Lawndale and Torrance. Our current enrollment exceeds 25,000 students with a broad mixture of minority representation including African-American, Asian, and Hispanic students. We are a comprehensive two-year community college with strong transfer, vocational and lifelong learning opportunities. Finally, we have ties with the local industrial and service industries in our community and provide ongoing training for local aerospace employees, a major training component with IBM, and HITCO, CALSIP etc.

History of TQM/CQI Activities
The Beginning:

The President of El Camino College, Dr. Sam Schauerman, attended a workshop in 1987 where he received an orientation to Total Quality Management. To him the features of interest for education included the concept that quality is everyone's responsibility, that continual

improvement is expected, and that the customer defines quality. Additionally he found that TQM also focused on developing a system for communication, that it required training for all employees, that it empowered front line personnel to make decisions to meet customer expectations and that it focused on evaluating processes and systems, not people. All of these concepts informed his decision to approach members of our academic community to investigate the potentials of this new management philosophy. El Camino College began its transformation into a Total Quality organization in late 1988 when a group of ten employees were invited to join ECC faculty in a two-day seminar presented by Process Management International. This seminar focused on training El Camino College faculty to teach TQM in local industry. Subsequently the President reconvened this group of ten to ascertain if the institution should begin our own journey. A Total Quality Management Steering Committee was formed and, with their assistance, the actual journey began in the Spring of 1989 when a group of 33 administrators, supervisors, faculty and staff attended ten days of training facilitated by TEC (Technology Exchange Center) and David and Carole Schwin. This workshop focused on visioning, leadership skills, and an introduction to Continuous Quality Improvement tools and techniques.

Phase One - Campus Commitment to Excellence:

At the Spring '89 training, it was decided to title our TQM transformation "Campus Commitment to Excellence (CCE)." A CCE Coordinating Committee, representing leadership throughout the campus, was formed and proceeded with implementation strategies. During the Fall 1989, 67 managers and supervisors attended a 3-day TQM workshop (20 hours). In addition, initial team training for 3 pilot projects was conducted. Team training consisted of 80

hours of TQM instruction and/or process improvement work. Pilot projects focused on three administrative processes: Purchase Requisitions; Conference Attendance; and Maintenance Work Orders. In addition, the CCE Coordinating Committee planned and implemented in January, 1990, a Campus Commitment to Excellence Awareness Week to introduce TQM to the campus community. Two hundred and twenty-five employees attended one of these two-hour sessions.

Phase Two - Process Improvement Team Training and Activity and Formation of Area Steering Committees

In February, 1990, it was decided by the CCE Coordinating Committee to form a steering committee for each of our three major areas: Administrative Services; Student and Personnel Services; and Instruction. This new level of TQM administration was designed to coordinate and facilitate projects for future process improvement teams.

Of the three original pilot teams, one of the teams continued as an "extension team." From February to April, 1990, four new teams were formed to look at improving the following processes: Building Heating and Cooling Systems; Student and Staff Parking; Conference Reimbursement Procedure; and Communications within the Student Services area.

Training for the four new teams was modified to four days of training (32 hours) and 6 weeks of team project implementation. The training was facilitated by ECC staff and a TQM consultant hired by the district. In addition, project implementation was coordinated by the new TQM consultant.

Phase Three - Extension Teams. New Process Improvement Teams and Development of CCE Goals and Task Teams

From September 1990 to December 1990, nine new teams were trained and began work on process improvement projects. In addition, four teams developed in Phase Two continued their work as "extension teams."

In early 1991 it became apparent that the Campus Commitment to Excellence Coordinating Committee needed to form task teams to facilitate the progress of TQM implementation. Task teams were formed to focus on the following areas adapted from the Malcolm Balridge Award criteria: Leadership; Logistics (organizational culture+ coordinating/consulting needs); Goals and Standards; Planning; CCE Area Steering Committees; Communication; Training. Each task team developed a Vision and Mission Statement along with long and short term goals. Annual CCE status reports document the progress of these teams. Additionally, a five-year TQM implementation master plan was developed in 1991 and revised in January of 1993.

A Third round of TQM training was conducted between January and April of 1991 at which time six additional process improvement teams were operational.

Phase Four - Shared Governance, Instructional Program Review

As an outgrowth of a state mandate, the institution began working on a model for shared governance. California Assembly Bill 1725 stipulates that the decision-making process include input from all constituencies of the campus (faculty-staff-students-administration). The

institution held a two and one half day retreat in May, 1991 to begin work on developing our shared governance model and document. TQM tools and techniques were used to facilitate this process. This was the first time El Camino College utilized TQM processes to work on a global issue. Eighteen months later the Shared Governance Model was presented to our Board of Trustees for adoption. Implementation of this model will be further facilitated through the use of TQM training, tools and techniques.

A fourth round of training was conducted between October and December of 1991. At this time three new projects were identified and teams formed. There were several "extension teams" in operation from previous training rounds.

A new Instructional Program Review model was developed during the 1991/92 school year using TQM tools and techniques. The process begins with data collection and team processes at the departmental level with shortened TQM training given to all department team leaders to assist in facilitating team-building and self-directed work. Though program review is being fostered as an ongoing process, it will have an end product, every five years, in a Self-Study Report that parallels our accreditation process and standards. Validation teams and reports will also be a part of this process. Thirteen self-study pilot teams, representing nine academic divisions, are currently involved in the self-study process. The results of their work is being monitored by the college's Academic Senate, our CCE Coordinating Committee, the college Curriculum Committee and our College Council.

Phase Five- Training Focusing on the Self-Directed TQM Employee

Round five was the first round of training in which the participants would not immediately form a process improvement team. It was also the first time in which students were included in the training. The training schedule reverted to four days (32 hours) and was for the first time training workshops were facilitated solely by El Camino College staff. Thirty three people completed the training and were encouraged throughout the workshop to identify skills to improve quality at their worksite.

Phase Six - Quality Transformation of El Camino College

TQM at El Camino College has gone through various levels and peaks over the past three years. Those involved in the coordination strongly believe that the institution is sensing the need for a synergistic approach to continuous quality improvement at our college. In-depth discussions are currently focused on a strategic reorganization to facilitate a revitalized quality mission and direction for the institution. Initial actions taken as a result of these discussions include the assignment of a full-time coordinator for our quality program in June of 1992 and the establishment of a central office with staff for coordinating training, communications and logistics.

At this point a critical mass of employees that have been trained in the basic principles and tools of Total Quality Management and its applications to higher education; around 500 employees out of a total full-time work force of around 800. By January 1993 thirty-one process improvement teams were involved in some phase of the "Plan-Do-Check-Act" cycle.

Success Stories

Four and one-half years into TQM implementation we have over 400 (73%) of our support staff trained in TQM basics, 69 management (98%) and only 75 (23%) of our full-time faculty. However, we now have over 50 full-time faculty that have completed the Classroom Assessment Techniques training with an additional 17 going through the process this semester. As you can probably determine from these numbers, we are experiencing difficulty with full-time faculty in accepting the TQM philosophy as such, but are experiencing, I believe, tremendous success in using a viable alternative strategy, Classroom Assessment Techniques as is mentioned below.

As of this semester we have 31 process improvement teams active in a variety of tasks mostly related to the support services side of our college. Over the past three years these teams have reduced processing time, reduced customer complaints, and have improved the responsiveness of our services from processing work orders, conference requests and purchase requisitions to restructuring our health benefits package with increased options at a reduced cost to the District. We have three new initiatives in place this year that should have a real impact on instruction, i.e. a Curriculum Development Process Improvement Team to eliminate bureaucratic steps in developing new courses; a team working on strategies to improve retention of minority students; and 12 instructional program review teams that are working with a set of quality tools to address program review from a constituent perspective. In addition to these teams, we are utilizing institutionally with all employee unions, a new form of team-based collective bargaining, namely "Interest-Based Bargaining" developed by the California Foundation For the Improvement of Employer/Employee Relations that utilizes many of the TQM tools to promote teamwork and

build collective contract language. Our shared governance structure, mandated by State law, has representation from all constituent groups and utilizes several TQM team tools to facilitate our consensus-building decision-making process. Additionally, we are in the process of deploying a strategic planning/budget development model that uses the Japanese-created technique of Quality Function Deployment (listening to customer needs) and Hoshin Planning (aligning all unit goals around a few annual breakthrough strategies) and are piloting a Cost of Quality Model (recording captured cost savings as a result of process improvements). Finally, we are administering our second Organizational Climate Survey to truly assess how far El Camino has come in implementing TQM principles since we began in 1988.

Current Initiatives

Of recent interest has been the alliance of the Classroom Assessment Project, pioneered by Drs. Patricia Cross and Thomas Angelo, with the philosophy of continuous quality improvement. This breakthrough has finally provided a focus and a forum for the application of TQM principles and practices directly in the classroom. Currently El Camino College has trained over 50 full-time faculty members in these techniques (CATS Project) and anticipates adding further support for the project during the 1993 academic year. The focus will be on improving learning in the classroom and developing learning theory skills within our faculty.

Other recent initiatives include the development of natural-work teams throughout the campus at local worksites. The goal is to have natural work teams transform into self-managing teams over a period of time. Training has been modified to incorporate additional information on

team-building, team development, team decision making development and new roles for managers in a self-managed team environment. In addition, El Camino College will be conducting two TQM-oriented institutional surveys during the Spring: re-administration of an institutional climate survey that was conducted in 1989 and a "TQM Tools Survey" being conducted throughout the institution to ascertain which continuous quality improvement tools and techniques are currently being utilized in the workplace. This latter survey will assist the CCE coordinator's office in developing additional training components for rapid deployment of TQM tools and techniques through walk-in training, Just-In-Time team training and the introduction of individualized, computer-based, TQM instruction.

The El Camino College Quality Institute

The Quality Institute was established in the Fall of 1992 as a response to the numerous requests El Camino College has received to consult and train others outside our campus. This for-profit center is currently engaged in several consultancies across the nation and is beginning a major contract with Sony Corporation of America in April, 1993, to train personnel in Sony's logistics and distribution center.

Strategies for Implementing TQM in Higher Education

As outlined in their TQM Implementation Guide (1991), Goal/QPC listed the following five different strategies being used by U.S. organizations to implement TQM:

The TQM Element Approach.

This approach works with the key systems, organizations, and tools of Total

Quality Management. This method was widely used in the early 1980's by companies that tried to implement specific elements such as Quality Circles, Statistical Process Control, Taguchi Methods, and Quality Function Deployment.

The Guru Approach

This method uses the theories and lessons of one of the leading quality thinkers as a benchmark to determine where the organization has deficiencies and then to begin to make appropriate changes to remedy those deficiencies. For example, managers would attend Dr. W. Edwards Deming's courses, study his "14 Points," and try to implement them.

The Company Model Approach.

In this approach individuals or organizational teams would visit U.S. companies that are TQM leaders and determine what successes they had and how they had accomplished them. The individuals or teams would then integrate these ideas with their own and thus develop their own organizational model which would be adapted for their organization. This method was used widely in the late 1980's and is exemplified by the initial winners of the Baldrige National Quality Award.

The Japanese Total Quality Approach

Organizations using this method study the implementation techniques and strategies employed by Deming Prize-winning companies and use this experience to develop a five-year Master Plan. This approach was used by Florida Power & Light to implement TQM and win the Deming Prize.

The Prize Criteria Approach.

Using this model, an organization applies the criteria of the Deming Prize or the Baldrige Award as benchmarks to identify areas for improvement. This approach is being used by hundreds of organizations as the 1990's begin.

El Camino College Quality Model

El Camino College initially used the TQM Element approach, but has shifted, recently, to using our own adaptation of the Baldrige Award criteria as the benchmark standard for monitoring implementation progress. Our model consists of five interconnected elements surrounding the following criteria:

Quality Improvement System

Policy Development

Quality in Daily Work

Education and Training

Quality Improvement Activities

Under each of these elements we have established task teams, reporting to the Campus Commitment to Excellence Coordinating Committee, who are responsible for developing objectives and action plans for the next five years. Task team membership includes members of the CCE Coordinating Committee:

Campus Commitment to Excellence Quality Model	
Quality Criteria	**Responsible Task Team**
Quality Improvement System	**CCE Structure and Logistics Task Team** Responsible for implementing a structure which infuses changes in the organizational and cultural climate to promote continuous improvement
Policy Development	**CCE Planning Task Team** Responsible for ensuring that campus planning activities focus on customer needs, on achieving measurable process improvement, and fostering continuous improvement teams. **CCE Leadership Task Team** To ensure that senior management, by their words and actions, promote the tenets of TQM, remove barriers to success and monitor the institution's progress. **CCE Communications Task Team** To communicate through all forms of media the status of the College's TQM program.
Quality in Daily Work	**CCE Goals & Standards Task Team** To ensure that accurate and timely data is available for the decision-making process; to ensure that measurable improvement goals are incorporated into all levels of college operations; to ensure that evaluation of process improvement takes place on a regular basis; and to ensure that communication of results takes place.
Education & Training	**CCE Training Task Team** To provide comprehensive, timely, and relevant training for all employees to enable them to continuously improve processes in support of the College's mission and goals.
Quality Improvement Activities	**CCE Area Steering Committee Task Teams (Instruction/Adm. Services/Stud. & Personnel Services)** To ensure that relevant prioritized projects are undertaken with trained teams, in an organized and coordinated manner, in all aspects of El Camino's improvement activity with input received from all levels of the College's staff.

As we have grown in our TQM experience, so too have we encountered resistance to Total Quality Management. Below we will describe a few of the major problems and pitfalls.

Faculty Concerns

The faculty at El Camino College have been the slowest group to accept Total Quality Management as an operational philosophy. The following concerns form the core of their argument:

TQM Is A Business Model

Because ECC began its implementation quite early, the organization struggled to adapt the TQM model from manufacturing to the service/education sector; this caused the faculty to perceive TQM early on as a productivity/widget model. Some faculty even perceive TQM as a regimented form of organizational management that threatens academic freedom and the right of the teacher to direct the work of the classroom.

Calling Students "Customers"

Some faculty see the "customer-oriented" philosophies of TQM as being a case of the tail wagging the dog. They see the student telling the teacher what they want to learn, and engaging in popularity contests, as appealing to the lowest common denominators among the students, thereby undermining academic standards.

The Cost of TQM Training

Some faculty use the cost of training to oppose the TQM approach. They strongly feel that money is being squandered on TQM that could be utilized for

direct classroom support.

Impact on Teaching

Many faculty who are not engaged in learning theory research or who haven't investigated the classroom assessment techniques pioneered by Drs. Patricia Cross and Tom Angelo, cannot see how TQM relates to improvement in the classroom. Many see the TQM model as being service oriented and applicable to such educational services as admissions, registration, counseling, financial aid, etc., but divorced from classroom activity.

Top Down Approach

California Community Colleges now have in place a shared governance process that was mandated by the passage of California Assembly Bill 1725 in 1988. Since its passage, the college has been developing strategies and structures to include more and more faculty in the decision-making process. From our perspective TQM simply enhances and expands the concepts of shared governance; however, some faculty see it from the opposite viewpoint. Since TQM at El Camino College started with the CEO embracing the concept, some faculty see it as another "top down" management approach. What some fail to see is that a group of campus leaders, having been exposed and trained in the theories of TQM, agreed with the Superintendent on implementation.

Mid-Management Issues

In addition to faculty concerns, middle managers have, traditionally, a difficult time in transitioning to their new roles in a TQM environment. This has been true at El Camino. The following are the major mid-management issues that El Camino is facing:

1) Anticipating the mid-management crisis and handling it well;
2) Dealing with mid-management fear that their role in the organization will be minimized or eliminated;
3) Consistency of practice: what do you do with a top manager who doesn't "buy-in" to the TQM process;

and

4) How to assist the authoritative style manager to accept their new roles in a an empowered team environment.

In response to these issues, El Camino College has developed a management training program for 92/93 that has included a two-day workshop, conducted by Fox Valley Technical College, on "New Roles For Managers," and several workshops on identifying barriers to worker empowerment and strategies to address these barriers. Throughout the training, the college leadership has reinforced its commitment to the current management staff and to assure them that TQM efforts will not result in a reduction of the management force but a redirection of management's efforts towards becoming coaches of their employees, nurturers of employee decision-making, and strategic planners on a daily basis. In addition the college President's cabinet is developing a proposal to revise the management performance evaluation towards a

focus on continuous improvement within their areas and to empower mid-level managers with many decisions currently reserved for the Cabinet.

Some Additional Problems and Pitfalls

In our efforts, El Camino College has identified several pitfalls that develop as you implement continuous quality improvement strategies:

Responding to Negative Reactions to TQM "Buzzwords"

Many people within the organization have a difficult time with many of the TQM acronyms and phraseology. Words like Total Quality Management, empowerment, self-managed teams, management by fact, and, "customers" appear to elicit the strongest reactions. We are quite sensitive to these concerns and have strived to explain terminology consistently and to eliminate buzzwords when necessary. For example, we call our quality effort "Campus Commitment to Excellence" to address those who have difficulty with the acronym TQM.

Establishing Process Improvement Teams Without Training

A great pitfall to the functioning of process improvement teams is the tendency to establish teams in advance of training or to establish teams when only part of its membership has been trained in continuous quality improvement tools and techniques. One of the most important components of TQM team activity is the collection and monitoring of data on a particular process. Without the TQM tools of statistical process control it is almost impossible to develop the necessary information to begin improvement strategies; this is also true of several other quality tools. The end result will be low morale, disbanding of the team effort

and reluctance to embrace future training and/or improvement tasks. A word to the wise: go slow at first, get a critical mass trained prior to implementing process improvement teams!

Not Walking the Talk

It is quite difficult to change a person's behavior. TQM requires massive changes in the way we approach our work including the concept of teamwork, group decision-making and the establishment of empowerment and trust throughout the organization. These are difficult when everyone within the traditional organization has learned to either accept authority or to follow the leader. As our college has begun this transformation we have experienced "lapses" in practicing the new techniques. It is important that peers form a support group to allow individuals the freedom to air their views, especially in letting a colleague know when s/he is not practicing what they preach.

Improvement Activities Without Recognition Strategies

Implementing TQM requires a tremendous investment of time and energy from every employee. A real pitfall is to ask employees to give of their time to work on improvement strategies and to forget to recognize their efforts. As your leadership begins to develop implementation plans, don't forget to develop a recognition system that will support your entire staff.

Don't Try To Scale the Mountain in One Day

As mentioned earlier, go slow! It is important that your organization take TQM implementation in stages. First, you must train a critical base of employees, approximately one-half, before a critical mass can be achieved to begin implementation. Second, train and then establish a few pilot improvement teams that are constantly supported by trainers and facilitators during each stage of their process work. Third, develop your own internal training capabilities; don't rely on outside trainers to maintain your implementation plans. If you launch into a massive five-year plan and deploy numerous improvement teams all within your first year, you are doomed to failure. Keep remembering that continuous quality improvement is a never-ending race that has no finish; therefore, you can take your time. Finally, the way to success is through training and more training. As educational institutions we can use all of our creativity to develop training strategies that will address the various needs of our campus constituents in learning about and practicing Total Quality Management. Look at different training needs for staff, faculty and management and deploy a training plan that meets their needs. Ask employees what training they need, in what format do they need it, and in what timeframe.

Innovation, Change, and Continuous Improvement

We acknowledge that through our efforts in training and deploying TQM principles and practices throughout our college we will realize some improvement

in the services we render. However, we also acknowledge that without innovation these efforts will remain relatively flat. Therefore, you must reinforce throughout this journey the need for innovation both in the way we streamline our current processes and in the establishment of new initiatives. Innovation is the catalyst to making quantum leaps in continuous improvement. For example, we are building a cadre of faculty trained in the application of multi-media to the classroom. When trained these faculty will assist the college in making innovative changes to curricular design and instructional delivery.

Why Quality Improvement at El Camino College?

We at El Camino College truly wish to remain an educational leader within our community. It is obvious that we must change to make this happen. Massive demographic changes within our student population, the globalization of our curriculum, and in these times of finite resources, doing more with less are our major challenges and opportunities. In order to succeed we must become more focused on who we serve; we must listen to our customers-our students, our 4-year institutions, and our community. In addition, we know that there is an imperative to build teamwork in our society which requires us to train students to cooperate and to learn to celebrate our diverse interests and to build consensus. All of these needs are implied within the principles and practices of Total Quality Management for the real gain to TQM is on the human side of quality.

In summary, El Camino College will, most assuredly, improve its service processes; over time, ECC will significantly alter instructional delivery methods as well as the content of our

curriculum; and, employees will become more productive by assigning monetary and human resources more wisely. But we believe that the most lasting effect that TQM will have on our institution will be the changes we affect in getting people to work together and to respect each other's strengths. Total Quality guru W. Edwards Deming tells us to evaluate processes, not people. By focusing on the who and not the what we are objectively improving the effectiveness of our organization. But, ironically, we are also making significant improvements in the motivation and morale of our employees. Through this systematic approach to decision-making and the empowerment of front-line employees to make improvements, we are building an infrastructure of goodwill that will become the legacy for future generations.

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